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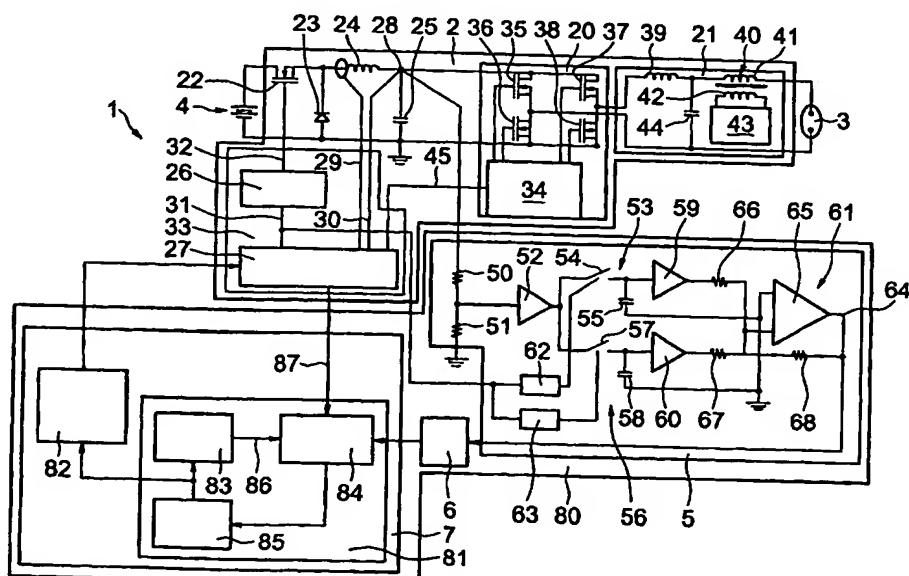
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(54) Title: CIRCUIT AND METHOD FOR OPERATION OF A GAS DISCHARGE LAMP



(57) Abstract: The invention relates to a circuit (1) and a method for operation of a gas discharge lamp (3) with a switching transformer (2), which switching transformer comprises a switch (22), a converter inductor (24) and a control means (27) in a control loop (33) for measuring a lamp voltage and setting a desired power. In accordance with the invention, the switching transformer (2) comprises a second control loop (80). By means of the second control loop the switching transformer is adjustable to individual lamp conditions.

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INTERNATIONAL SEARCH REPORT

In
onal Application No
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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H05B41/292

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 437 043 A (PITEL IRA J) 13 March 1984 (1984-03-13) column 1, line 63 - column 2, line 16; figures 1-3 column 3, lines 3-45 column 4, line 36 - line 37 column 7, line 5 - line 33	1,2, 11-13,17 3-7, 14-16, 18,19
A	EP 0 596 740 A (GEN ELECTRIC) 11 May 1994 (1994-05-11) column 7, line 8 - column 8, line 5; figures 3a-c,4a column 10, line 29 - column 11, line 45	1,11-13, 17
X	----- -/-	

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the International filing date
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- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the International filing date but later than the priority date claimed

- *T* later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the International search

17 September 2004

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30.11.2004

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INTERNATIONAL SEARCH REPORT

Int'l Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 87/07995 A (INNOVATIVE CONTROLS INC) 30 December 1987 (1987-12-30) page 3, line 6 - page 13, line 5; figures 1,2a -----	11-13
A	EP 0 477 587 A (MATSUSHITA ELECTRIC IND CO LTD) 1 April 1992 (1992-04-01) the whole document -----	1-7, 11-19

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2004/050770

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple Inventions in this International application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the Invention first mentioned in the claims; it is covered by claims Nos.:

1-7, 11-19

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-7,11-19

A circuit for operation of a gas discharge lamp

2. claims: 8-10

A measuring filter

INTERNATIONAL SEARCH REPORT

Int'l Application No
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Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 4437043	A	13-03-1984	NONE		
EP 0596740	A	11-05-1994	US	5357174 A	18-10-1994
			CA	2108419 A1	06-05-1994
			DE	69308986 D1	24-04-1997
			DE	69308986 T2	09-10-1997
			EP	0596740 A1	11-05-1994
			JP	6215887 A	05-08-1994
WO 8707995	A	30-12-1987	US	4686428 A	11-08-1987
			CA	1250889 A1	07-03-1989
			EP	0282488 A1	21-09-1988
			JP	63501666 T	23-06-1988
			WO	8707995 A1	30-12-1987
EP 0477587	A	01-04-1992	EP	0477587 A1	01-04-1992
			JP	4212294 A	03-08-1992